

OFFICE OF THE REGISTRAR, MYSORE VISWA-
VIDYAVILAYA KARYA SOUDHA, CRAWFORD
HALL, MYSORE

Notification dated 1st March—6th April 1963

No G 4/440/52-63 Post graduate Diploma Course of One Year duration in Radiology is instituted in the University of Mysore from 25th March 1963

The following are the Regulations Courses of Study and Scheme of Examination governing the Course

Eligibility —

Candidates for the Diploma in Radiology shall be required to have passed the M B B S Degree Examination of this University or an examination accepted by the University of Mysore as equivalent thereto

Conditions of Admission —

- (1) (a) No candidate shall be admitted to the Diploma Course, unless he/she has subsequent to passing the M B B S Degree Examination, held a House appointment for a period of one year in a hospital attached to a teaching institution recognised by the University of Mysore for this purpose,

OR

- (b) Produce evidence of having been in the active practice of the profession for two years subsequent to passing M B B S Degree Examination,

- (2) No candidate shall be permitted to take the Examination unless he/she has been duly registered as Post-graduate in the speciality in this University for a period of not less than one year.

Duration of the Course —

12 months, commencing from July during each year

Exemption —

Candidates who have held teaching posts in the respective special department of a teaching hospital recognised by the University of Mysore for this purpose for at least one year, may claim exemption for a period not exceeding six months of the course for the particular Diploma

Registration —

Every candidate who wishes to appear for the Diploma in the particular speciality shall be required to register his/her name with the University of Mysore by 1st of January every year

Courses of Study —

(a) Every candidate should work in the department/hospital of the concerned speciality for one year under the supervision of a teacher recognized for this purpose

Details of the Course is under —

Diploma in Medical Radiology (D M R)

1 Courses of Study —

(a) The Course shall consist of theoretical, clinical and practical instructions of no less than 30 lecture demonstrations in Medical Radiology during the 12 months which shall consist of the following —

Part I—General Physics including Electricity, Radiation, Physics, Elements of Radiology including Radiographic technique

Part II—Medical Radio diagnosis, Radio-Therapy and Nuclear Medicine

The instructions in Part II to be taken concurrently with those of Part I.

2 Scheme of Examination —

(a) The examination shall consist of a written paper, an oral and a practical under Part I, and a written paper, an oral and a practical under Part II and shall be as follows —

Part I—Written Paper	3 hours	100 marks
Oral		50 "
Practical		50 "
Part II—Written Paper	3 hours	100 marks
Oral		50 "
Practical		50 "

(b) A candidate who fails in Part II of the examination can be admitted to the subsequent examinations without attending any additional course subsequently for a period not exceeding two years after which he/she should attend the course for six months before appearing for the examination

3 Examination in Parts —

(a) Part I of the examination may be taken at the end of six months after the commencement of the course, but no candidate shall be declared to have passed Part II unless he/she has passed Part I of the Examination, and

(b) A candidate who fails in Part I of the examination, cannot take part II examination

4 Marks qualifying for pass —

(a) Candidates should obtain not less than 50 per cent of marks in written and 50 per cent of marks in oral and practical to secure a pass, and

5 Fees —

	Rs.
(a) Registration	50
(b) Course of study	200
(c) Examination	50 for each part

6 Additional Course for failed students —

The fee payable shall be Rs 100

Syllabus —

"A" GENERAL PHYSICS

Training in Physics will consist of lectures, experimental demonstrations including practical work

Introductory Physics —

Basics on Measurements and Units
Mechanical forces, work and energy
Heat and energy

Electricity and Magnetism —

Magnetism—Properties of Magnetic poles Law of magnetic force, Magnetic fields, lines of force Simple magnetic properties of Iron/steel

Electrostatics—Properties of Electric charges. Laws of electric force Induced charges Conductors and insulators Elementary electron theory Units of electric charge and potential Capacity and condensers

Current Electricity—Magnetic effects of current, solenoids electromagnets Definition of units of current and potential difference practical units, ampere coulomb, volt, farad Ohm's Law and resistance—the Ohm Heating effect—power, watt, watt-hour Principles of moving coil and moving iron meters, ammeters and voltmeters Electromagnetic induction—Laws of mutual and self-induction—The Henry—Alternator and simple D C Dynamo Properties of alternating currents, peak and

R M S values, Induction coil—Transformers—Inductances—Elementary properties of inductances and condensers in A C Circuits, Impedance, reactance—Power in A C Circuits—Conduction of electricity in gases—Cathode Rays—Thermionic emission—Saturation current—outline of atomic structure—Nucleus and orbital electrons

"B" RADIATION PHYSICS

X-Rays Electro-magnetic radiations, waves and quanta, rectilinear propagation, inverse square law, General electro magnetic spectrum, Production and properties of X rays, spectrum emitted by X ray tube, effects of variations in the tube potential

X-Rays and Matter Elementary outline of absorption of X ray by matter, secondary electron emission Compton and photo-electric absorption of X rays by heavy and light elements

Variation with wave length—scattering of X-rays, practical aspects of these phenomena in Radiography and Radio therapy.

Ionisation by X-rays The definition of the roentgen

Protection —

Principles of protection in X Ray Departments Measurements of stray radiation Electrical protection International and British recommendations—Experiments for small groups of students

(This paragraph is intended only as a guide to the type of experiment suitable for the instruction envisaged).

Plots of magnetic fields (Iron filings and small compass) Magnetic effect of a current explored with small compass Measurements of current and voltage and application of Ohm's Law to resistance measurements—Measurements of currents in series and parallel resistances—Voltage drop in long leads of finite resistance—Heat output of low power electric lamp (oil calorimeter)—Shunts for milliammeter—Voltmeter constructed from milliammeter and high resistance—Induction experiments with coils and magnets—Voltage and output of a small step-down transformer

"C" X RAY MEASUREMENTS

Methods of measuring X-Rays

Ionization measurements—construction of the roentgen parallel plate chamber

Principles of integrating, direct reading and condenser, dosimeters X-ray quantity measurement—half value layer Clinical dosage measurements—Depth doses—Isodose curves

Factors affecting depth dose

"D" RADIUM

Radioactive emission—properties of alpha, beta and gamma rays Principal transformations of the radium family—Absorption of Gamma rays by matter—Use of Radium and Radon—preparation of Radium—Needles and tubes—precautions against loss—Measurement and testing of radium containers—Elementary calculation of dosage from Radium and Radon Sources—Methods of Gamma-ray dosage—Measurement of Gamma rays—Protection problems in the Radio-Therapy Department—Two lectures on recent advances in Radioactive Isotope and super-voltage tubes

Practical —

Use of clinical dosimeters, Measurement of 'in air' output—H V L Measurements

Measurements of surface and depth dose

"E" RADIOGRAPHIC TECHNIQUE

- 1 Taking films and fluoroscopy
- 2 The Dark Room
- 3 Extremities
- 4 Teeth, jaw and face
- 5 Skull and sinuses
- 6 Spinal column
- 7 Thoracic viscera.
- 8 Alimentary tract
- 9 Other abdominal viscera renal and female genital tract
- 10 E B localization
- 11 Soft tissue radiography
- 12 Neuro Radiology

"F" RADIO DIAGNOSIS

Chest.

Cardio-vascular system

- 1 X Ray examination of the heart
- 2 Normal Cardiac shadow
- 3 Displacement of the heart
- 4 Cardiac dilatation and hypertrophy V D H
 - (a) Congenital heart disease
 - (b) The Aorta
 - (c) The Pericardium
 - (d) Pulmonary Artery.
 - (e) Peripheral vessels

RESPIRATORY SYSTEM

- 1 Radiological investigation of the Chest
- 2 Anatomy of the Bronchi
- 3 Chest walls
- 4 Diaphragm
- 5 Lung fields
- 6 Lobes and interlobar fissures
- 7 Lymphatic system of thorax
- 8 Upper air passages
- 9 Diseases of the bronchi
- 10 Atelectasis
- 11 Emphysema
- 12 Pneumo coniosis
- 13 Pneumonias
- 14 Pulmonary fibrosis
- 15 Lung abscess
- 16 Fungal infections
- 17 Pulmonary infections
- 18 Tuberculosis
- 19 The Mediastinum
- 20 Neoplasm—Primary and Secondary.
- 21 Diseases of the Pleura

GENITO URINARY SYSTEM.

- 1 Technique of examination
- 2 Pyelography and Aortography
- 3 Kidneys
- 4 Ureters
- 5 Bladder
- 6 Prostate and Urethra
- 7 Uterus and tubes

EYE

Nervous system

Technique.—

- 1 Radiological features of cranium—normal and pathological
- 2 Cerebral angiography
- 3 Pneumo—encephalography and Ventriculography

- 4 Intracranial lesions
- 5 Congenital anomalies of the skull
- 6 Diseases of the skull
- 7 Spinal cord

TEETH AND JAWS

Technique,—

- 1 Anatomy—Radiological features
- 2 Pathology of sinus diseases

TEMPORAL BONE.

- 1 Anatomy
- 2 Technique
- 3 Diseases of the Mastoids

BONES AND JOINTS

Extremities —

Normal	Upper.
Do	Lower
Do	Vertebral column
Do	... Pelvis.

"G" PATHOLOGY.

General and special Pathology of bones

Congenital abnormalities

- 1 Skull
- 2 Spine and Pelvis
- 3 Extremities

FRACTURES AND DISLOCATIONS

Inflammatory diseases

- 1 Periostitis.
- 2 Osteomyelitis
- 3 Tuberculosis of the bones and joints
- 4 Syphilis

Acute and Chronic Arthritis.

Gout, Rheumatoid Arthritis, Ankylosing spondylitis.

Osteochondritis

Diseases due to disturbances of growth

Do	nutrition
Do	metabolism
Do	endocrines

"H" RADIO THERAPY.

1 Development of Dosimetry in Radiotherapy (Historical) Biological (skin erythema), Chemical (Pastille dose photographic methods), and Physical (Ionisation methods "Roentgen"). The absorbed dose unit—"R.B.E."

2 Theory of Dosimetry and instrumentation units of dose—The Roentgen—"The Gramme-Roentgen"—Roentgen equivalent Physical "REP"—The "RAD"—Roentgen equivalent man "REM" and relative biological efficiency (RBE)—Theory of radiation dosimetry and instruments used in clinical dosimetry.

3 Dosage in Clinical Practice.

Dosage estimation in X-Ray Therapy—Skin dose—Depth dose and isodose curves—H T Generators—Source skin distance and inverse square law filtration and choice of filter—effects on bone of dose distribution—High energy in bone—Supervoltage Therapy—Integral dose—dose estimation in radium therapy—K—Factor Y-ray Therapy by surface, interstitial and intra cavity radium application—Telecurie therapy—Radioactive Isotopes—General principles—basis of methods of clinical use—methods of dosimetry

4 Physical basis of action of Radiation on living materials Energy dissipation within tissues and cells—damage induced by Ionising radiation—difference in biological effectiveness of fast and slow particles—Chemical effects of radiation—Chemical steps in the initiation of Radio-biological damage—Environmental conditions which affect Radio-sensitivity.

5 Elements of Radio biology—Experimental and Clinical action of radiation on normal tissues and organs—action on malignant tissues—Radiation sickness.

6 Methods of Radio-therapy—Selection of quality of X-ray beam (H V L)—Voltage range—filters—Physical treatment planning (wide or small fields—single and multiple fields)—Two fields at right angles with wedge filters—Tangential fields—moving fields—F S D—Tumour localization—Position of fields and beam direction methods—The X-ray grid—dose, time and intensity—multiple small doses—single massive dose, fractionation and overall time, dose rate, total dose.

Radium applications—Dosage system, tissue volume involved, techniques.

Application of Radio-active Isotopes in Therapy

7 Safety and Protection. Permissible doses for radiation workers—somatic and genetic hazards.

Protection of Radiological workers—protection of patients, protection of public—Radiation monitoring methods.

8 Clinical basis for the choice of methods of treatment (Surgery and various Radio Therapy methods—either single or in combination)

9 Radiation reaction in patients and their care

10 Elements of Pathology, Anatomical considerations, Surface Radiographic, Clinical manifestations and special investigation, natural history of malignant disease at various special sites.

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|---|----------------------------|
| (a) Mouth, tongue and lip | (b) Nose and Nasal sinuses |
| (c) Pharynx and tonsils | (d) Larynx |
| (e) Bronchus | (f) Oesophagus and stomach |
| (g) Rectum and Anal canal | (h) Salivary glands |
| (i) Skin | (j) Bone and soft tissues |
| (k) Lymphoid tissues and blood forming organs | (l) Thyroid |
| (m) Kidney and bladder | (n) Testicles |
| (o) Penis | (p) Breast |
| (q) Ovaries | (r) Uterus—Cervix and Body |
| (s) Vagina, Urethra and Vulva | (t) Eye |
| (u) Brain and Spinal cord | |

Methods and scope of Radio-therapy in the above conditions

11 Radio-therapy in inflammatory and other non-malignant conditions of the skin, eye, thyroid, non-malignant gynaecological disorders and lymph nodes and other tissues.

12 Statistics and results of treatment.

"I" NEOPLASMS.

- (1) Simple, (2) Malignant, (3) Multiple Myeloma, (4) Metastasis.

- (1) Bone cysts, (2) Diseases of unknown origin, (3) Calcification and Ossification of soft tissues

GASTRO INTESTINAL SYSTEM

(1) Technique, (2) Radiological diagnosis, (3) Anatomy of G I tract technique, study of Oesophagus, Stomach, Small and large intestines—Contrast study of the above parts and double contrast

1 Oesophagus Congenital disorders of Pharynx and Oesophagus, Inflammatory conditions of Oesophagus and corrosive stricture—Neoplasms of Oesophagus, Hiatus Hernia, Achalasia of the Cardia, Oesophageal varices

2 Stomach Congenital conditions, Gastritis, Gastric ulcer, tumours, simple and malignant.

3 Duodenum Duodenal ulcer

4 Small intestines Congenital disorders Situs inversus partialis. Intestinal obstruction, Ileocaecal tuberculosis, Crohns disease Neoplasms—benign and malignant

5 Appendix Radiological investigation, Pathology

6 Large intestines Congenital disorders, Hirschsprung's disease, Idiopathic Megacolon, Caecal tuberculosis, Amoeboma, Neoplasms—benign and malignant, Ulcerative colitis, Diverticulitis.

Radiological study of Pancreas, Liver, Adrenals

1 Plain X-Ray of the abdomen

2 Special investigations Abdominal Aortography
Peri renal air insufflation

(Approved by the Academic Council at the meeting held on 27—28th June 1962 and assented to by the Chancellor in letter No A 3/167-58/62 63, dated 5th March 1963

By Order,

49 K S SIDDALINGAIAH, Registrar

OFFICE OF THE CONTROLLER OF EXAMINATIONS,
MYSORE VISVAVIDYANILAYA, KARYA SOUDHA,
CRAWFORD HALL, MYSORE

Notification dated 17th May 1963

No. Ex6/63-64 Pursuant to the resolution of the University Syndicate passed at the meeting held on 10th May 1963 the fee prescribed for the issue of Duplicate marks card from this Office is enhanced from Rs 2 per attempt to Rs 5 per attempt

This is given effect from 10th May 1963

By Order,

263 , Controller of Examinations

FINANCE DEPARTMENT

OFFICE OF THE TAHSILDAR, TREASURY SECTION,
GUDIBANDA TALUK, KOLAR DISTRICT

Notification

No Try PR 22/63-4 It is hereby notified for the information of the Savings Bank Depositors of the Taluk Treasury, Gudibanda, that the Savings Bank annual interest statement for 1959-60 has been received after audit from the Accountant General, Bangalore. The Savings Bank Pass Books may be presented by depositors at this Treasury for passing the interest in the Pass Book, and posting them up to date on any working day during Treasury Business hour.

Working hours, 10-30 A.M. to 2-30 P.M.

1134 K. RAMAIAH, Tahsildar.

OFFICE OF THE TREASURY OFFICER, TALUK
TREASURY, MADHUGIRI

Notification dated 22nd May 1963

Sub —Adding up of interest to the Savings Bank accounts of this Treasury

It is hereby notified for the information of the public that the audited statement of Savings Bank annual Interest Statements for the year 1959-60 and 1960-61, have been received from the Accountant General, Bangalore duly audited and therefore the Savings Bank Account Holders of this Treasury are requested to send their pass books for adding interest to the Pass Books

1157 , Treasury Officer

OFFICE OF THE DEPUTY COMMISSIONER,
FINANCE DEPARTMENT, TREASURY DEPARTMENT,
CHICKMAGALUR

Notification dated 21st May 1963

No A7 Try. 16/63-64. It is hereby notified for the information of the Savings Bank Depositors of Chickmagalur District Treasury that the Annual Interest Statement of S B for the year 1961-62 has been received after audit

The savings bank pass books may be presented at the treasury on any working day for adding awaited interest to the pass books up to the end of 1961-62

The holders of savings bank pass book account numbers mentioned below are hereby requested to produce their savings bank pass books to District treasury, Chickmagalur, for being sent to the Accountant General, Bangalore for the purpose of audit of interest.

1952,	2403,	2749,	2810,	2882,	2957,	2960,	2986,
3111,	3122,	3244,	3271,	3291,	3345,	3380,	
3397,	3557,	3577,	3750,	3768,	3845,	3980,	
4282,	4297,	4326,	4593,	4626,	4645,	4648,	
4652,	4655,	4665,	4688,	4694,	4708,	4729,	4744,
4774,	4977,	4987,	5039,	5101,	5107,	5201,	
5209,	5243,	5261,	5262,	5264,	5288,	5289,	
5364,	5372,	5380,	5437,	5483,	5496,	5538,	
5549,	5550,	5574,	5584,	5617,	5629,	5645,	
5696,	5663,	5667,	5669,	5696,	5697,	5698,	
5699,	5707,	5708,	5790,	5811,	5822,	5823,	
5824,	5825,	5826,	5852,	5853,	5855,	5866,	
5870,	5881,	5885,	5935,	5939,	5942,		

1155 , Dy. Commr.

MISCELLANEOUS DEPARTMENTS

OFFICE OF THE DEPUTY COMMISSIONER,
BIJAPUR

Notification dated 23rd December 1962.

Shri S. B. Upnal, Office E A K, Tahsildar's Office,
Muddebihal

No RB/LND P It is hereby invested with the powers under the Bombay Land Revenue Code as specified below —

Sec of *Extent of powers delegated*
L R C.

74	To receive Rajinamas
135-F	To dispose of mutation entries as specified in the Mysore Land Record of Rights Act, 1958
152	To sign notices of demand
154	To restrain and sell moveable property
86 & 87	To try rent suits up to Rs 200

6988 H MAHARUDRAIAH, Dy Commr